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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,502	12/30/2003	Vincent J. Zimmer	42P18116	7254

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Anthony H. Azure
BLAKELY, SOKOLFF, TAYLOR & ZAFMAN LLP
Seventh Floor
12400 Wilshire Boulevard
Los Angeles, CA 90025

EXAMINER

WILSON, YOLANDA L

ART UNIT	PAPER NUMBER
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2113

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/748,502

Applicant(s)

ZIMMER ET AL.

Examiner

Yolanda L. Wilson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4,8-12,16-18 rejected under 35 U.S.C. 103(a) as being unpatentable over Jeddeloh (USPN 5862314A) in view of Alexander et al. (USPN 6189111B1). As per claim 1, Jeddeloh discloses detecting a faulty portion of memory in a computer system, the faulty portion having stored in a system software memory region of memory; and relocating from the faulty portion of memory to a safe portion of memory in column 4, lines 19-48; column 5, lines 7-26.

Jeddeloh fails to explicitly state a system software component and relocating the system software component.

Alexander et al. discloses this limitation in column 6, line 54 – column 7, line 4; column 8, lines 16-25. The system software component is the critical information resources disclosed in column 3, lines 1-6.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a system software component and relocate the system software component. A person of ordinary skill in the art would have been motivated to have a system software component and relocate the system software component because this information is important for the running of the computing

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system and for being able to recover this information for continued processing, see column 8, lines 16-25.

3. As per claim 2, Jeddeloh fails to explicitly state wherein the system software component includes instructions loaded from a firmware device during a pre-boot phase of the computer system that persist into an operating system runtime of the computer system.

Alexander et al. discloses this limitation in column 6, line 54 – column 7, line 4; column 3, lines 1-6.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the system software component includes instructions loaded from a firmware device during a pre-boot phase of the computer system that persist into an operating system runtime of the computer system. A person of ordinary skill in the art would have been motivated to have the system software component includes instructions loaded from a firmware device during a pre-boot phase of the computer system that persist into an operating system runtime of the computer system because this information is important for the running of the computing system.

4. As per claim 3, Jeddeloh fails to explicitly state finding the safe portion of memory within the system software memory region; and updating a system software memory manager to indicate the system software component is located at the safe portion of memory in column 4, lines 19-48.

Jeddeloh fails to explicitly state moving the system software component to the safe portion of memory.

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Alexander et al. discloses this limitation in column 6, line 54 – column 7, line 4; column 8, lines 16-25. The system software component is the critical information resources disclosed in column 3, lines 1-6.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to move the system software component to the safe portion of memory. A person of ordinary skill in the art would have been motivated to move the system software component to the safe portion of memory because this information is important for the running of the computing system and for being able to recover this information for continued processing, see column 8, lines 16-25.

5. As per claim 4, Jeddeloh discloses finding the safe portion of memory within the memory of the computer system; moving the system software memory region to the safe portion of memory; and resetting a base address for the system software memory region in column 4, lines 19-48.

Jeddeloh fails to explicitly state relocating the system software component.

Alexander et al. discloses this limitation in column 6, line 54 – column 7, line 4.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have relocating the system software component. A person of ordinary skill in the art would have been motivated to have relocating the system software component because this information is important for the running of the computing system.

6. As per claim 8, Jeddeloh discloses determining a memory address of the faulty portion in column 3, lines 48-51.

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7. As per claim 9, Jeddeloh discloses marking the faulty portion as unusable in column 4, lines 19-48.

8. As per claim 10, Jeddeloh discloses detecting a faulty portion in a system software memory region of a computer system during an operating system runtime of the computer system, the system software memory region having stored for the computer system; and relocating from the faulty portion to a safe portion of memory of the computer system during operating system runtime in column 4, lines 19-48; column 5, lines 7-26.

Jeddeloh fails to explicitly state a system software and relocating the system software.

Alexander et al. discloses this limitation in column 6, line 54 – column 7, line 4. The system software is the critical information resources disclosed in column 3, lines 3-6.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a system software and relocate the system software. A person of ordinary skill in the art would have been motivated to have a system software and relocate the system software because this information is important for the running of the computing system.

9. As per claims 11,18, Jeddeloh discloses finding the safe portion of memory; indicating the portion of system software is located at the safe portion of memory in column 4, lines 19-48.

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Jeddeloh fails to explicitly state moving the system software component to the safe portion of memory.

Alexander et al. discloses this limitation in column 6, line 54 – column 7, line 4; column 8, lines 16-25. The system software component is the critical information resources disclosed in column 3, lines 1-6.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to move the system software component to the safe portion of memory. A person of ordinary skill in the art would have been motivated to move the system software component to the safe portion of memory because this information is important for the running of the computing system and for being able to recover this information for continued processing, see column 8, lines 16-25.

10. As per claim 12, Jeddeloh wherein updating a system software memory manager for the system software memory region to indicate the portion of system software is at the safe portion of memory in column 4, lines 19-48.

11. As per claim 16, Jeddeloh discloses wherein execution of the plurality of instructions further perform operations comprising marking the faulty portion of the system software memory region as unusable after relocating the system software in column 4, lines 19-48.

12. As per claim 17, Jeddeloh discloses a processor; a memory device operatively coupled to the processor; and at least one flash device operatively coupled to the processor, the at least one flash device including firmware instructions which when executed by the processor perform operations comprising: detecting a faulty portion of

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the memory device during an operating system runtime of the computer system, the faulty portion of the memory device having stored for the computer system; determining a location of the faulty portion; and relocating from the faulty portion to a safe portion of the memory device during operating system runtime in column 4, lines 19-48; 49-57; column 5, lines 7-26. It is known in the art that a flash device is a type of memory.

Jeddeloh fails to explicitly state a system software and relocating the system software component.

Alexander et al. discloses this limitation in column 6, line 54 – column 7, line 4. The system software component is the critical information resources disclosed in column 3, lines 3-6.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a system software component and relocate the system software component. A person of ordinary skill in the art would have been motivated to have a system software component and relocate the system software component because this information is important for the running of the computing system.

13. Claims 5,6,14,20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeddeloh in view of Alexander et al. in further view of Lewis (20030154392A1). As per claims 5,14,20, Jeddeloh and Alexander et al. fail to explicitly state the system software memory region comprises System Management Random Access Memory (SMRAM).

Lewis discloses this limitation on page 1, paragraph 0003.

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Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the system software memory region comprises System Management Random Access Memory (SMRAM). A person of ordinary skill in the art would have been motivated to have the system software memory region comprises System Management Random Access Memory (SMRAM) because SMRAM is stored critical information used to run a computer system.

14. As per claim 6, Jeddeloh and Alexander et al. fail to explicitly state wherein the system software memory region comprises a firmware reserved region of memory of the computer system.

Lewis discloses this limitation on page 1, paragraph 0003.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the system software memory region comprises a firmware reserved region of memory of the computer system. A person of ordinary skill in the art would have been motivated to have the system software memory region comprises a firmware reserved region of memory of the computer system because SMRAM stores critical information used to run a computer system.

15. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jeddeloh in view of Alexander et al. in further view of Finch et al. (5592616A).

16. As per claim 7, Jeddeloh and Alexander et al. fail to explicitly state setting a memory error detector during a pre-boot phase of the computer system.

Finch et al. discloses this limitation in column 3, lines 46-49.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have setting a memory error detector during a pre-boot phase of the computer system. A person of ordinary skill in the art would have been motivated to have setting a memory error detector during a pre-boot phase of the computer system because the memory error detector allows for memory faults to be found.

17. Claims 13,19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeddelloh in view of Alexander et al. in further view of Bond et al. (20030177129A1).

18. As per claims 13,19, Jeddelloh and Alexander et al. fail to explicitly state wherein the portion of system software comprises an executable image in accordance with a Portable Executable and Common Object File Format (PE/COFF).

Bond et al. discloses this limitation on page 4, paragraph 0071.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the portion of system software comprises an executable image in accordance with a Portable Executable and Common Object File Format (PE/COFF). A person of ordinary skill in the art would have been motivated to have the portion of system software comprises an executable image in accordance with a Portable Executable and Common Object File Format (PE/COFF) because the PE/COFF describes how the layout of the disk file is represented in memory.

19. Claims 15,21 Claims 15,21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeddelloh in view of Alexander et al. in view of Lewis in further view of Wikipedia.

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20. As per claims 15,21 Jeddelloh and Alexander et al. fail to explicitly state wherein the system software memory region comprises a firmware reserved region.

Lewis discloses this limitation on page 1, paragraph 0003.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the system software memory region comprises a firmware reserved region. A person of ordinary skill in the art would have been motivated to have the system software memory region comprises a firmware reserved region because SMRAM stores critical information used to run a computer system.

Jeddelloh, Alexander et al., and Lewis fail to explicitly state wherein firmware of the computer system to operate in accordance with an Extensible Firmware Interface (EFI) framework standard.

Wikipedia discloses this limitation on page 1.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the system software memory region comprises a firmware reserved region, wherein firmware of the computer system to operate in accordance with an Extensible Firmware Interface (EFI) framework standard. A person of ordinary skill in the art would have been motivated to have the system software memory region comprises a firmware reserved region, wherein firmware of the computer system to operate in accordance with an Extensible Firmware Interface (EFI) framework standard because the EFI is involved in the booting of the computer system.

21. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jeddelloh in view of Alexander et al. in further view of Wikipedia.

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22. As per claim 22, Jeddeloh and Alexander et al. fail to explicitly state wherein the firmware instructions to operate in accordance with an Extensible Firmware Interface (EFI) framework standard.

Wikipedia discloses this limitation on page 1.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the system software memory region comprises a firmware reserved region, wherein firmware of the computer system to operate in accordance with an Extensible Firmware Interface (EFI) framework standard. A person of ordinary skill in the art would have been motivated to have the system software memory region comprises a firmware reserved region, wherein firmware of the computer system to operate in accordance with an Extensible Firmware Interface (EFI) framework standard because the EFI is involved in the booting of the computer system.

Claim Rejections - 35 USC § 101

23. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

24. Claims 10-16 are not limited to statutory embodiments. In view of Applicant's disclosure, on page 21, claim 10, the machine-readable medium is not limited to statutory embodiments, instead being defined as including both statutory embodiments (e.g., recordable/non-recordable media) and non-statutory embodiments (e.g., propagated signals (e.g., carrier waves...)). As such, the claim is not limited to statutory subject matter and is therefore non-statutory.

Response to Arguments

25. Applicant's arguments filed 11/24/06 have been fully considered but they are not persuasive. Applicant states on page 9, "Even if the Examiner's characterization of Alexander's critical information resources as a 'system software component is correct, which Applicants do not concede, Jeddeloh still would not disclose the claimed combination because Jeddeloh fails to disclose 'detecting a fault portion of a memory in a computer system during an operating system runtime.' ... Therefore, Jeddeloh fails to discloses or fairly suggest 'detecting a fault portion of memory in a computer system during an operating system runtime...'".

26. Examiner respectfully disagrees. The Examiner would like to point to column 5, lines 7-26, which disclose that faulty portions of memory are detected once the memory has been incorporated within the computer system. Examiner interprets this incorporation within the computer system to be during operating system runtime.

27. Applicant states on pages 10-11, "Not only do Jeddeloh and Alexander fail to disclose every element and limitation of claim 1, there is no motivation to combine the reference because Jeddeloh actually teach against the combination suggested by the Examiner... Thus, the error map is used so that the processor does not access and write to defective memory portions. As such, relocation of system software components are not an issue, since in Jeddeloh, the purpose is to prevent a component from being written to a defective memory portion in the first place. Thus, Jeddeloh actually teaches against the 'relocating [[of]] the system software component' because its purpose is to

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eliminate the need to relocate components stored in defective memory portions.

Accordingly, there is no motivation to combine Jeddeloh with Alexander...'

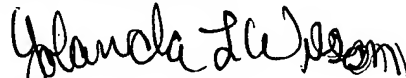
28. Examiner respectfully disagrees. Alexander was used to show that critical information, such as information concerning an operating system, is stored in memory. As described in column 4, lines 33-47 and column 5; lines 27-37, a remapping table is used to indicate where the contents of the defective memory locations have been stored in non-defective memory locations; therefore, the memory contents have been relocated. Thus, Jeddeloh does not teach against relocating system software components because relocation of the system software components is the ability of these components to be read from a different memory location.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yolanda L. Wilson whose telephone number is (571) 272-3653. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (571) 272-3645. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Yolanda L Wilson
Examiner
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